

WHAT IS CLAIMED IS:

1 1. A safety circuit for an electric motor including at least one power
2 input, at least one motor winding and an input ground, the safety circuit comprising:
3 a. a relay coupled to the at least one power input and the input ground;
4 and
5 b. at least one transistor switch coupled to the relay, the at least one
6 power input and the at least one motor winding.

1 2. A safety circuit in accordance with claim 1 wherein the relay
2 comprises an inductor that is inductively coupled to the at least one transistor switch.

1 3. A safety circuit in accordance with claim 1 wherein the relay
2 comprises a resistor that is coupled to the at least one transistor switch.

1 4. A safety circuit for an electric motor including at least first and second
2 power inputs, at least first and second motor windings and an input ground, the safety circuit
3 comprising:

4 a. a relay coupled to the at least two power inputs and the input ground;
5 and

6 b. at least first and second transistor switches coupled to the relay, the
7 first transistor switch being coupled the first power input and the first motor winding, and the
8 second transistor switch being coupled to the second power input and the second motor
9 winding.

1 5. A safety circuit in accordance with claim 4 wherein the relay
2 comprises an inductor that is inductively coupled to the at least first and second transistor
3 switches.

1 6. A safety circuit in accordance with claim 4 wherein the relay
2 comprises a resistor that is coupled to the at least first and second transistor switches.

1 7. An electric motor comprising:
2 a. at least first and second power inputs;
3 b. at least first and second motor windings;
4 c. an input ground; and

- 5 d. a safety circuit comprising:
6 i. a relay coupled to the at least two power inputs and the input
7 ground; and
8 ii. at least first and second transistor switches coupled to the relay,
9 the first transistor switch being coupled the first power input and the first motor
10 winding, and the second transistor switch being coupled to the second power input
11 and the second motor winding.

1 8. An electric motor in accordance with claim 7 wherein the relay
2 comprises an inductor that is inductively coupled to the at least first and second transistor
3 switches.

1 9. An electric motor in accordance with claim 7 wherein the relay
2 comprises a resistor that is coupled to the at least first and second transistor switches.

1 10. A method of operating an electric motor including at least one power
2 input, at least one motor winding and an input ground, the method comprising:

- 3 a. providing a safety circuit comprising:
4 i. a relay coupled to the at least one power input and the input
5 ground; and
6 ii. at least one transistor switch coupled to the relay, the at least
7 one power input and the at least one motor winding;
8 b. supplying power to the at least one power input; and
9 c. ceasing operation of the electric motor if the relay is not coupled to
10 ground.

1 11. A method in accordance with claim 10 wherein the relay comprises an
2 inductor that is inductively coupled to the at least one transistor switch.

1 12. A method in accordance with claim 10 wherein the relay comprises a
2 resistor that is coupled to the at least one transistor switch.

1 13. A method of operating an electric motor including at least first and
2 second power inputs, at least first and second motor windings and an input ground, the
3 method comprising:

- 4 a. providing a safety circuit comprising:

5 i. a relay coupled to the at least first and second power inputs and
6 the input ground; and

7 ii. at least first and second transistor switches coupled to the relay,
8 the first transistor switch being coupled the first power input and the first motor
9 winding, and the second transistor switch being coupled to the second power input
10 and the second motor winding;

11 b. supplying power to the at least first and second power inputs; and

12 c. ceasing operation of the electric motor if the relay is not coupled to
13 ground.

1 14. A method in accordance with claim 13 wherein the relay comprises an
2 inductor that is inductively coupled to the at least first and second transistor switches.

1 15. A method in accordance with claim 13 wherein the relay comprises a
2 resistor that is coupled to the at least first and second transistor switches.

1 16. A pump comprising an electric motor comprising:

2 a. at least first and second power inputs;

3 b. at least first and second motor windings;

4 c. an input ground; and

5 d. a safety circuit comprising:

6 i. a relay coupled to the at least two power inputs and the input
7 ground; and

8 ii. at least first and second transistor switches coupled to the relay,
9 the first transistor switch being coupled the first power input and the first motor
10 winding, and the second transistor switch being coupled to the second power input
11 and the second motor winding.

1 17. A pump in accordance with claim 16 wherein the relay comprises an
2 inductor that is inductively coupled to the at least first and second transistor switches.

1 18. A pump in accordance with claim 16 wherein the relay comprises a
2 resistor that is coupled to the at least first and second transistor switches.